

REMARKS

Applicant concurrently files herewith an excess claim fee for one (1) additional independent claim and two (2) additional dependent claims.

Claims 1-15 and 22-29 are all the claims presently pending in the application. New claims 22-29 have been added to more particularly define the invention. Applicant respectfully cancels claims 16-21 without prejudice or disclaimer in response to the restriction requirement. Applicant gratefully acknowledges the Examiner's allowance of dependent claims 5 and 14 and rewrites these claims in independent form above. Claims 1-4, 6-13, and 15 stand rejected on prior art grounds.

Claims 1 and 7-9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fukuda, et al. (JP 8-5806). Claims 1 and 6-9 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Cha, et al. (U.S. Publication No. 2001/0035923). Claims 2-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fukuda, et al. in view of Kim, et al. (U.S. Publication No. 2002/0070650). Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cha, et al. in view of Kim, et al. Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art in view of Cha, et al. Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art in view of Fukuda, et al. Claims 11-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art in view of Fukuda, et al. and further in view of Kim, et al. Claims 11, 12 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art in view of Cha, et al. and further in view of Kim, et al.

These rejections are respectfully traversed in view of the following discussion.

It is noted that the amendments are made only to more particularly define the invention and not for distinguishing the invention over the prior art, for narrowing the scope of the claims, or for any reason related to a statutory requirement for patentability.

It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

I. THE CLAIMED INVENTION

Applicant's invention, as disclosed and claimed, for example by claim 1, is directed to a reflector.

The reflector includes a body formed of insulating resin, and having an outer surface and an inner surface defining a space open to an object to which a light is to be directed, and a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space. (See Page 7, lines 6-9; and Page 10, lines 4-9 and 17-19; and Figures 7, 8 and 12).

Similarly, as disclosed and claimed, for example by claim 10, is directed to a liquid crystal display unit for producing an image. The display unit includes a liquid crystal panel comprising an incident surface and an image producing surface, a driving circuit connected to the liquid crystal panel, and varying the transparency of a part of the liquid crystal panel so as to transmit a light from the incident surface to the image producing surface through the part, and a light source illuminating the light incident surface with the light, including a lamp comprising electrodes and generating the light propagated along an optical path to the liquid

crystal panel, a power supply cable including a conductive pattern and voltage application lines directly connected to one of the electrodes and connected through the conductive pattern to the other of the electrodes, and a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space accommodating the lamp and open to the optical path for directing the light to the optical path. (See Page 10, lines 4-5 and 17-19; Page 13, lines 4-9 and 21-23; Page 14, lines 8-11; and Figure 9).

Conventional liquid crystal display units (e.g., see Figures 1-6) include “a round cable used for connecting the low voltage line 3b to the electrode of the lamp,” with a large diameter situated on a plate portion of the reflector, a flat cable fixed to the reflector by an adhesive compound or a thin conductive layer deposited on the reflector by an expensive and slow evaporation technique. Accordingly, the conventional display units tends to either occupy a wide space in the unit or, even with the smaller cables, provide a less reliable connection where disconnection, cracking and peeling off are “liable to take place after the completion of the liquid crystal display panel” due “to thermal stress or other external force exerted on the extremely thin interconnection, ..., as the difference in thermal expansion coefficient between the reflector and the interconnection gives rise to the thermal stress.” (Page 1, line 16-Page 5, line 3; and Figures 1-6).

An aspect of the invention includes a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space.

Another aspect includes a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space

accommodating the lamp and open to the optical path for directing the light to the optical path. These aspects provide the conductive pattern with the appropriate thickness while increasing adhesion and flexibility between the conductive pattern and the outer surface of the reflector body, thereby increasing the ability to withstand thermal stresses resulting in decreased peel off. (Page 6, lines 12-18; Page 10, lines 6-16; Page 14, lines 16-23; and Page 16, lines 4-13).

As a result, the inventive reflector and, similarly liquid crystal display unit, reduce disconnections of the conductive pattern while manufacturing time is reduced and throughput is increased compared to conventional reflectors. (See Page 3, lines 13-16; Page 4, lines 1-8; Page 10, lines 6-16; Page 14, lines 16-23; and Page 16, lines 7-13).

II. THE PRIOR ART REJECTIONS

A. The Fukuda, et al. Reference

Regarding claims 1 and 7-9, Fukuda, et al. (“Fukuda”) fails to teach or suggest the features of independent claim 1, including a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space.

Instead, Figure 3 of Fukuda teaches a backlight lamp reflector for a liquid crystal display with a backlight lamp and reflection plate. The reflection plate includes a transparent polymer film 10, an alloy thin film layer 20, an adhesive layer 30, and a molded body 40. The alloy thin film layer reflector is essentially comprised of a silver-gold alloy, a silver-platinum alloy or a silver-palladium alloy layered over the transparent polymer film 10.

Applicant respectfully submits that the Office Action mischaracterizes Fukuda because Fukuda merely teaches that the alloy thin film layer 20 (what the Examiner attempts

to analogize to "a conductive pattern") is vacuum deposited on the transparent polymer film 10 where the silver alloy is melted with an electron beam to form the alloy thin film layer 20. Accordingly, the alloy thin film layer, which is a portion of the reflection plate, functions to increase light reflection, and does not appear to supply electricity to a light source, and thus is structurally and functionally equivalent to a reflector, not to a "conductive pattern" as suggested in the Office Action. (See Office Action at Page 2; Fukuda at Abstract; Sections [0003], [0004], [0007], [0008], [0011]-[0017], [0021] and Figure 3). Therefore, the reflection plate, including the alloy thin film layer, is not equivalent to a conductive pattern, and there is no disclosure or suggestion of a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space as recited in Applicant's invention.

In contrast, Applicant's reflector includes a conductive filler 31 printed on the outer surface of the body, i.e., reflector 2, to form a conductive pattern 31. The conductive pattern is used for supplying an electric power to a light source. Therefore, the reflector decreases peel off while manufacturing time is reduced and throughput is increased compared to conventional reflectors. (Page 6, lines 12-18; Page 10, lines 6-16; Page 11, lines 3-5; Page 14, lines 16-23; Page 16, lines 4-13; and Figures 7-9 and 12).

In sum, the conductive pattern is printed on the surface of a reflector body for supplying electric power to a light source. In contrast, Fukuda teaches a backlight lamp reflector for a liquid crystal display with a reflection plate where the reflection plate includes an alloy thin film layer, which is vacuum deposited on a transparent polymer film for reflecting light, not being printed on an outer surface of a body, i.e., a reflector 2, for

conducting electricity to the light. Further, for not teaching that the alloy film 20 supplies power to light source. (See Fukuda at [0004], [0007] and [0017]).

Indeed, Fukuda does not teach or suggest either printing to form the reflection plate or the alloy thin film layer conducts electricity. Accordingly, the Office Action further mischaracterizes Fukuda because the reflection plate, and, in particular, the alloy thin film layer, is not capable of supplying an electric power to a light source. Therefore, Fukuda does not disclose or teach including that including the a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space. (See Office Action at Page 2).

B. The Cha, et al. Reference

Applicant respectfully submits that Applicant's priority date of July 6, 2000, precedes Cha's filing date of April 20, 2001. Accordingly, the Cha reference is not a prior art reference under 35. U.S.C. § 102(e).

Second, regarding claims 1 and 6-9, Cha, et al. ("Cha") fails to teach or suggest the features of independent claim 1, including a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space.

Instead, Figure 5 of Cha teaches a liquid crystal display device with a lamp 512, a second frame 660, which partially surrounds the lamp 512, and a cold wire 516a is connected to a cold electrode of the lamp 512. Applicant respectfully submits that the Office Action mischaracterizes Cha because Cha only teaches that the cold wire 516a (what the Examiner attempts to analogize to the "conductive pattern") is simply "received in the wire groove 680 formed in the outer portion of the second frame 660 and is connected to an inverter." (Office

Action, Page 3; and Column 2, Paragraph [0040]; and Column 4, Paragraph [0068]).

In contrast, as discussed above, Applicant's invention teaches that the conductive pattern 31 is printed on the surface of the reflector body 2 for supplying electric power to a light source. Accordingly, Cha does not teach or suggest that a conductive pattern is printed on the outer surface of a body like Applicant's invention as Cha simply places a pre-formed conventional wire in the groove 680a. Thus, one of ordinary skill in the art would not use printing to form a conventional cold wire 516a. Clearly, the conventional cold wire is not structurally or functionally equivalent to Applicant's conductive pattern. Therefore, Cha does not disclose or teach including a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space as recited in Applicant's invention.

In sum, Cha only discloses a liquid crystal display device where the cold wire 516a is simply "received in the wire groove 680 formed in the outer portion of the second frame 660 and the cold wire is connected to a cold electrode of the lamp and an inverter. Thus, the Applicant traverses the assertion that Cha teaches Applicant's invention of independent claim 1, and related dependent claims 6-9.

C. The § 103(a) Rejection of Fukuda in view of Kim, et al.

Regarding claims 2-4, to make up for the deficiencies of Fukuda, the Examiner relies on Kim, et al. ("Kim"). Kim fails to do so.

First, Applicant respectfully submits that Applicant's priority date of July 6, 2000, precedes Kim's filing date of June 27, 2001. Accordingly, the Kim reference is not a valid prior art reference.

Second, Kim, which pertains to a lamp apparatus for a liquid crystal display capable of preventing wire short circuiting, does not have the same aim as Fukuda, as discussed above, which pertains to improved light resistance and reflection by a reflection plate, and the urged combination would not have been made, absent hindsight. (See Kim at Abstract; Column 1, Paragraph [0003]; and Column 3, Paragraph [0022]). Thus, the two references teach against being combined.

Thirdly, Kim does not disclose, teach or suggest, including a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space as recited in independent claim 1.

Further, Kim does not disclose, teach or suggest, including the insulating resin is a thermoplastic resin, and the conductive pattern is formed of thermosetting resin containing conductive material as recited in claim 2. Kim also does not disclose, teach or suggest, including the thermoplastic resin is a polyethylene terephthalate resin as recited in claim 3 or a polycarbonate resin as recited in claim 4.

Instead, Figures 11-12 of Kim teach a lamp apparatus for a liquid crystal display, including a lamp housing 14 into which a lamp is inserted. A wire 15 passes through the end of the lamp housing 14 to supply electric power to the lamp, and a resin 16 is provided at the end of the lamp housing 14 to enclose the wire 15. The resin 16 is injected between the end of the lamp housing 14 and the wire 15 so that the resin 16 “prevents the end of the lamp housing 14 from being in a direct contact with the wire 15, thereby preventing a short [circuit].” (See Column 5, Sections [0050]-[0051]). Accordingly, this lamp apparatus, which includes a conventional wire 15 connected to the lamp and held in place by the resin 16, is not the structural and functional equivalent to Applicant’s conductive pattern.

Since this lamp apparatus only includes a conventional wire but does not include the equivalent of a conductive pattern, let alone, a conductive pattern printed on the outer surface of a body, e.g., a reflector 2, Kim is deficient and thus does not teach the specific limitations of dependent claims 2-4.

For the reasons stated above, the claimed invention, and the invention as cited in independent claim 1, and related dependent claims 2-4, are fully patentable over the cited references.

D. The § 103(a) Rejection of Cha in view of Kim, et al.

Regarding claims 2-3, to make up for the deficiencies of Cha, the Examiner relies on Kim, et al. ("Kim"). Kim fails to do so.

First, as indicated above, Applicant's priority date of July 6, 2000, precedes Cha's filing date and Kim's filing date. Accordingly, neither the Cha nor the Kim references are valid prior art references.

Second, Kim, which pertains to a lamp apparatus for a liquid crystal display capable of preventing wire short circuiting, does not have the same aim as Cha, as discussed above, which pertains to a liquid crystal display device with an improved molded frame to reduce the number of parts and facilitate assembly and repair. Accordingly, the urged combination would not have been made, absent hindsight. Thus, the two references teach against being combined. (See Kim at Abstract; Column 1, Paragraph [0003]; and Column 3, Paragraph [0022]).

Thirdly, Kim does not disclose, teach or suggest, including a conductive pattern printed on the outer surface for supplying an electric power to a light source placed in the space as recited in independent claim 1.

Further, Kim does not disclose, teach or suggest, including the insulating resin is a thermoplastic resin, and the conductive pattern is formed of a thermosetting resin containing conductive material as recited in claim 2. Kim also does not disclose, teach or suggest, including the thermoplastic resin is a polyethylene terephthalate resin as recited in claim 3 or a polycarbonate resin as recited in claim 4. Please note, Applicant agrees with the Examiner that Cha also does not “disclose a conductive pattern formed of thermosetting resin containing conductive material” as recited in claim 2. (See Office Action, Page 4, Section 7).

Instead, as discussed above, Figures 11-12 of Kim teach a lamp apparatus for a liquid crystal display including a lamp housing 14 into which a lamp is inserted where a wire 15 passes through the end of the lamp housing 14 to supply electric power to the lamp. Accordingly, this lamp apparatus, which includes a conventional wire 15 connected to the lamp and held in place by the resin 16 to prevent contact with the lamp housing 14, is not the structural and functional equivalent to Applicant's conductive pattern. (See Column 5, Sections [0050]-0051].)

Since this lamp apparatus only includes a conventional wire but does not include the equivalent of a conductive pattern, let alone, a conductive pattern printed on the outer surface of a body, e.g., a reflector 2, Kim is deficient and thus does not teach the specific limitations of dependent claims 2-4.

For the reasons stated above, the claimed invention, and the invention as cited in independent claim 1, and related dependent claims 2-3, should be fully patentable over the cited references.

E. The § 103(a) Rejection of the Admitted Prior Art in view of Cha.

As indicated above, Applicant's priority date precedes Cha's filing date of April 20, 2001. Accordingly, the Cha reference is not a valid prior art reference.

Second, the references, separately, or in combination, fail to disclose, teach or suggest a motivation for being combined. In particular, as discussed above, the Admitted Prior Art ("AAPA") pertains to a conventional liquid crystal display, which attempts to provide a voltage to a lamp without peel-off, does not have the same aim as Cha, as discussed above, which pertains to a liquid crystal display device with an improved molded frame to reduce the number of parts and facilitate assembly and repair, and the urged combination would not have been made, absent hindsight. Thus, the two references teach against being combined.

Even if combined, the references do not teach or suggest the features of independent claim 10. Specifically, as discussed above, the AAPA fails to teach or suggest the features of independent claim 10, including a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space accommodating the lamp and open to the optical path for directing the light to the optical path.

Indeed, the Examiner admits that the AAPA does not disclose the above feature. (See Office Action, Page 5, Section 8, Second Paragraph).

Cha does not make up for the deficiencies of the AAPA.

Instead, as discussed above, Figure 5 of Cha teaches a liquid crystal display device with a lamp 512, a second frame 660, which partially surrounds the lamp 512, and a cold wire 516a is connected to a cold electrode of the lamp 512. Applicant respectfully submits that the

Office Action mischaracterizes Cha because Cha only teaches that the cold wire 516a (what the Examiner attempts to analogize to the “conductive pattern”) is simply “received in [a]the wire groove 680 formed in the outer portion of the second frame 660 and is connected to an inverter.” Accordingly, the second frame 660 simply includes a groove 680 to receive the cold wire 516a. (Office Action, Page 3; and Column 2, Paragraph [0040]; and Column 4, Paragraph [0068]).

In contrast, as discussed above, Applicant’s invention teaches, in part, that the reflector is formed of an insulating resin and has an outer surface where the conductive pattern 31 is printed. Accordingly, Cha does not teach or suggest that a conductive pattern is printed on the outer surface of a body as Cha simply places a pre-formed conventional wire in the groove 680a. Thus, one of ordinary skill in the art would not use printing to form a conventional cold wire 516a. Clearly, the conventional cold wire is not structurally or functionally equivalent to Applicant’s conductive pattern. Consequently, Cha does not teach or suggest or disclose Applicant’s invention.

Therefore, neither the AAPA nor Cha disclose or teach including a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space accommodating the lamp and open to the optical path for directing the light to the optical path as recited in claim 10 of Applicant’s invention.

For the reasons stated above, the claimed invention, and the invention as cited in claim 10, should be fully patentable over the cited references.

F. The § 103(a) Rejection of the Admitted Prior Art in view of Fukuda.

First, the references, separately, or in combination, fail to disclose, teach or suggest a motivation for being combined. In particular, as discussed above, the Admitted Prior Art (“AAPA”) pertains to a conventional liquid crystal display, which attempts to provide a voltage to a lamp without peel-off, does not have the same aim as Fukuda, as discussed above, which pertains to improved light resistance and reflection by a reflection plate, and the urged combination would not have been made, absent hindsight. Thus, the two references teach against being combined.

Second, even if combined, the references do not teach or suggest the features of independent claim 10. Specifically, as discussed above, the AAPA fails to teach or suggest the features of independent claim 10, including a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space accommodating the lamp and open to the optical path for directing the light to the optical path.

Indeed, the Examiner admits that the AAPA does not disclose the above feature. (See Office Action, Page 6, Section 9, Second Paragraph).

Fukuda does not make up for the deficiencies of the AAPA.

Instead, as indicated above, Fukuda merely teaches that the alloy thin film layer 20 (what the Examiner attempts to analogize to “a conductive pattern”) is vacuum deposited on the transparent polymer film 10 where the silver alloy is melted with an electron beam to form the alloy thin film layer 20. Accordingly, the alloy thin film layer, which is a portion of the reflection plate, functions to increase light reflection, and thus is structurally and

functionally equivalent to a reflector not a conductive pattern as suggested in the Office Action.

In contrast, as discussed above, Applicant's invention teaches, in part, that the reflector is formed of an insulating resin and has an outer surface where the conductive pattern 31 is printed. Even if Fukuda's reflection plate was, assuming arguendo, equivalent to Applicant's reflector, which it is not. Fukuda still does not teach or suggest Applicant's invention.

Indeed, Applicant's invention includes a reflector formed of an insulating resin and has an outer surface where the conductive pattern is printed, whereas Fukuda teaches a backlight lamp reflector for a liquid crystal display with a reflection plate where the reflection plate includes an alloy thin film layer, which is vacuum deposited on a transparent polymer film. As discussed above, Fukuda clearly does not teach or suggest a conductive pattern is printed on the outer surface of a reflector. Accordingly, the reflection plate, including the alloy thin film layer 20, is not structurally or functionally equivalent to Applicant's conductive pattern. Consequently, Fukuda does not teach or suggest or disclose Applicant's invention.

Therefore, neither the AAPA nor Fukuda disclose or teach including a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space accommodating the lamp and open to the optical path for directing the light to the optical path as recited in claim 10 of Applicant's invention.

For the reasons stated above, the claimed invention, and the invention as cited in claim 10, should be fully patentable over the cited references.

G. The § 103(a) Rejection of the Admitted Prior Art in view of Fukuda and further in view of Kim

Regarding claims 11-13, to make up for the deficiencies of the AAPA and Fukuda, the Examiner relies on Kim, et al. (“Kim”). Kim fails to do so.

First, Applicant respectfully submits that Applicant’s priority date of July 6, 2000, precedes Kim’s filing date of June 27, 2001. Accordingly, the Kim reference is not a valid prior art reference.

Second, Kim, which pertains to a lamp apparatus for a liquid crystal display capable of preventing wire short circuiting, does not have the same aim as the AAPA, as discussed above, which pertains to a conventional liquid crystal display for attempting to provide a voltage to a lamp without peel-off. Further, Kim also does not have the same aim as Fukuda, as discussed above, which pertains to improved light resistance and reflection by a reflection plate, and the urged combination would not have been made, absent hindsight. (See Kim at Abstract; Column 1, Paragraph [0003]; and Column 3, Paragraph [0022]). Thus, the references teach against being combined.

Kim does not disclose, teach or suggest, including a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space accommodating the lamp and open to the optical path for directing the light to the optical path as recited in independent claim 10.

Further, Kim does not disclose, teach or suggest, including the insulating resin is a thermoplastic resin, and the conductive pattern is formed of thermosetting resin containing conductive material as recited in claim 11. Kim also does not disclose, teach or suggest, including the thermoplastic resin is neither a polyethylene terephthalate resin as recited in claim 12 nor a polycarbonate resin as recited in claim 13. Please note, Applicant agrees with

the Examiner that the combined references, i.e., the AAPA and Fukuda, also do not “disclose a conductive pattern formed of thermosetting resin containing conductive material” as recited in claim 11. (See Office Action, Page 4, Section 6).

Instead, as discussed above, Figures 11-12 of Kim teach a lamp apparatus for a liquid crystal display including a lamp housing 14 into which a lamp is inserted and a wire 15 passes through the end of the lamp housing 14 to supply electric power to the lamp. Accordingly, the lamp housing 14 and the conventional wire 15, are not the structural and functional equivalent to Applicant’s reflector and conductive pattern. (See Column 5, Sections [0050]-[0051]).

Since this lamp apparatus only includes a conventional wire but does not include the equivalent of a conductive pattern, let alone, a conductive pattern printed on the outer surface of the reflector 2, Kim is deficient and thus does not teach the specific limitations of dependent claims 11-13.

For the reasons stated above, the claimed invention, and the invention as cited in independent claim 10, and related dependent claims 11-13, should be fully patentable over the cited references.

H. The § 103(a) Rejection of the Admitted Prior Art in view of Cha and further in view of Kim

Regarding claims 11, 12 and 15, to make up for the deficiencies of the AAPA and Fukuda, the Examiner relies on Kim, et al. (“Kim”). Kim fails to do so.

First, as indicated above, the Kim reference is not a valid prior art reference.

Second, Kim, which pertains to a lamp apparatus for a liquid crystal display capable of preventing wire short circuiting, does not have the same aim as the AAPA, as discussed

above, which pertains to a conventional liquid crystal display for attempting to provide a voltage to a lamp without peel-off. Further, Kim also does not have the same aim as Cha, as discussed above, which pertains to a liquid crystal display device with an improved molded frame to reduce the number of parts and facilitate assembly and repair. Thus, the references teach against being combined.

Kim does not disclose, teach or suggest, including a reflector including an insulating resin and including an outer surface where the conductive pattern is printed and an inner surface defining a space accommodating the lamp and open to the optical path for directing the light to the optical path as recited in independent claim 10.

Kim further does not disclose, teach or suggest, including the reflector has a first end and a second end corresponding to the electrodes of the lamp, and the conductive pattern extends along a shortest path between the first end and the second end as recited in claim 15. Please note, Applicant agrees with the Examiner that the combined references, i.e., the AAPA and Cha, also do not “disclose a conductive pattern formed of thermosetting resin containing conductive material” as recited in claim 11. (See Office Action, Page 4, Section 6).

Instead, as discussed above, Figures 11-12 of Kim teach a lamp apparatus for a liquid crystal display including a lamp housing 14 into which a lamp is inserted and a wire 15 passes through the end of the lamp housing 14 to supply electric power to the lamp. Accordingly, the lamp housing 14 and the conventional wire 15, are not the structural and functional equivalents to Applicant’s reflector and conductive pattern.

Since this lamp apparatus only includes a conventional wire but does not include the equivalent of a conductive pattern, let alone, a conductive pattern printed on the outer surface of the reflector 2, Kim is deficient and thus does not teach the specific limitations of

dependent claims 11, 12 and 15.

For the reasons stated above, the claimed invention, and the invention as cited in independent claim 10, and related dependent claims 11, 12 and 15, should be fully patentable over the cited references.

III. FORMAL MATTERS AND CONCLUSION

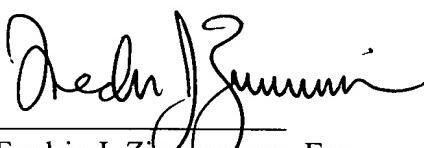
In view of the foregoing, Applicant submits that claims 1-15 and 22-29, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 1/6/04



Fredric J. Zimmerman, Esq.
Reg. No. 48,747

McGinn & Gibb, PLLC
8321 Old Courthouse Rd., Suite 200
Vienna, Virginia 22182
(703) 761-4100
Customer No. 21254